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The Maryland Fruit Grower

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Edited by the Secretary, A. F. Vierheller, Extension Horticulturist

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THE IMPORTANT FACTORS IN QUALITY PRODUCTION OF APPLES AND PEACHES

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The goal of every producer is 'better quality at lower cost.' Fruit growers have always consciously or unconsciously kept this excellent objective in mind and have taken every means within their power and pocketbooks to improve the quality of the fruits which are placed on the market. Hence, it is only human to ask the question, have the fruit growers made any material progress in their efforts to improve quality and what are the important factors that would contribute to any such improvement? In my memory of conditions less than twenty years ago in the fruit industry of the East, it was considered quite an achievement if an apple grower produced 60 to 70 per cent of U. S. No. 1 grade of apples, whereas, at the present time, it is quite common to find growers that produce 90 to 95 per cent of No. 1 fruit. Although the peach growers cannot show such great changes, they can point to improved varieties and improved yields that lower the cost per unit materially. Also, the peaches now go to market after a thorough beauty treatment that removes the 'goofus' feathers and renders the blush of the cheek more enticing to the buyer. When we examine in detail the various factors in any attempt to explain such progress to improve fruit quality, a list might very well include the following:

1. Better growers—experience plus better educational facilities have contributed to this end.
2. Better machinery—particularly better spraying machinery, for which growers must thank largely the manufacturers and salesmen of such machines.
3. Better spraying materials—again we must turn to the manufacturers as the main helpful agents.
4. Better varieties—through the constant efforts of research men of the agricultural experiment stations, U. S. Department of Agriculture, as well as various nurserymen, new and better varieties are being planted and grown.
5. Improved practices—elimination of guess-work by means of better pruning, fruit thinning, fertilizer use, mulching, irrigation, pollination, cultivation, covercrops, terracing, etc. Which have been placed on more scientific foundations as result of research work of various agricultural experiment stations and other agencies.

And when we speak of quality, just what is meant by the term 'better quality'? Briefly, it means improvement in color, shape, and size of the fruit, and in the freedom from defects, all of which determine the grade of fruit which can be packed, and also determine largely the demand for the fruit and the relative price received by the grower. We all know that

cull fruits have never been sold at a profit for the grower, and no grower wants to have any cull fruit, or even fruit of the lower U. S. grades, if there is any possible way to avoid it. With all of the hazards of the weather, the possibilities of spray injury, disease outbreak, and insect damage, it may seem to be a game of chance to produce any crop without a great percentage of cull fruit. And each season seems to bring a new set of conditions under which any set formula must be modified as the season progresses. Nevertheless, various growers are demonstrating each year and in a succession of years, that the amount of cull fruits can be lessened and the quality of the crop can be improved. Perhaps, most of their success can be attributed to the growers' ability to make use of the newer devices or improvements in existing practices which result from various experiments in the fields and laboratories of our research agencies.

Thinking in this vein, let us examine the more recent discoveries to learn what the fruit grower can use to his advantage in the direct improvement of fruit quality. First, the discovery of the red strains, or so-called red-sports, of our leading apple varieties through the joint efforts of growers and scientific men, is a tremendous advance in the improvement of red color in the face of repeated statements in former years that the apple tree was fixed in its characters and not prone to sport or to produce variations or strains. Now, new red strains of Delicious, Rome, and York, are particularly to be noted in the new plantings of apples. Other strains, such as red strains of Jonathan, Stayman, and Winesap may also find their places. One cannot doubt that real progress has been made through the discovery of these new red strains. Some kinks in the growing and storage of these new sorts may have to be ironed out, and again the research men must furnish the answers. At College Park, the Department of Horticulture has nearly one hundred of the new strains under study in cooperation with the U. S. Department of Agriculture, and it is hoped that studies on these strains will add new advances in the improvement of red color.

Another step forward in this fight for quality has been found in the improved methods of thinning fruit that puts this practice on a scientific leaf-area basis to give each fruit its full share of the materials that are needed for growth. The value of early thinning has been definitely shown so that some growers have even taken the extreme step of thinning the blossom clusters before the blossoms open. This practice is now in vogue in the Western States with reported success. Early thinning has the additional advantage of insuring the formation of blossom buds for the next year's crop, hence the so-called biennial bearing habit is avoided.

A third major advance in the form of "stop drop" sprays has been hailed as the greatest discovery for fruit growers that has ever been made. Probably all fruit growers have heard or read of this discovery of 1939 and many growers have used the materials with success this year. A large part of the experiments by the U. S. Department of Agriculture in 1939 were made on the apple trees on the Horticultural Farm of the University of Maryland near Beltsville. Thus, the use of the hormones or growth substances to control dropping of apples at harvest time has been tried with success on a number of our Maryland varieties including Yellow Transparent, Close, Duchess, Red Duchess, Williams, Early McIntosh, Wealthy, McIntosh, Rome, Gallia Beauty, Delicious, Stayman, Blaxtayman, Grimes, Turley, King David, Winesap, and York. Further work by the U. S. Department of Agriculture is in progress on some of these same varieties at the Maryland

Return to
A.F. Vierheller
College Park, Md.

ENTRY BLANK
MARYLAND APPLE SHOW
Baltimore, Md., January 14, 15, 16, 1941.

Name ..... Address .....

GROUP A - COMMERCIAL GROWERS

PLATES (5 apples per entry) - one plate per variety is permitted
Varieties to be entered:

....
....
....
....

DIAMONDS (16 apples per entry) one diamond per variety is permitted
Varieties to be entered:

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....
....
....

FLATS - (Apples to fill flat space approximately 12x18 in. representing box face) - one flat per variety permitted
Varieties to be entered:

....
....
....
....

FANCY BASKET (12-15 apples per entry) One basket per Exhibitor

.....

GROUP B - VOCATIONAL AGRICULTURAL SCHOOLS

Sufficient apples to fill 3x6 ft. space. Must include 1 diamond and 1 flat or 2 diamonds or 2 flats, beside plate apples. At least 5 plates should be included, and at least 5 varieties shown. Exhibitors must furnish own decorative material.

Check entry here .....

GROUP C - 4H CLUBS OR INDIVIDUAL CLUB MEMBERS

Ten plates of apples (5 apples per plate). At least 5 varieties must be included. Plates will be furnished at Show.

Check entry here .....

FOR FURTHER INFORMATION WRITE - A.F.VIERHELLER, COLLEGE PARK, MARYLAND.

THE APPLE EXHIBIT

This exhibit is held at the Lord Baltimore Hotel, Baltimore, January 15 and 16, 1941, and should not be confused with the Annual Meetings of the Society in Hagerstown , January 8 and 9, 1941. Entry blank is enclosed and further information will be furnished by writing, A.F.Vierheller, College Park,Maryland.

APPLE TREE REMOVAL

Some growers want to start pulling trees under the Tree Removal clause in the 1941 Soil Conservation Plan. Mr.R.O. Stelzer, State Coordinator, states that growers may go to their County Agents and fill out form ACP -64, stating acreage or number of trees to be removed, and the use of soil in the removed acreage during the coming year. The County Agent will then get approval by the County Committee and the work may be begun. The County Committee may arrange any system of check-up that they desire. Remember these facts: Dead trees are not included in the payments. Apple trees only are included. Not more than $15.00 per acre is allowed, and total payment depends upon the units of credit that the farm carries. Filler trees are not included in payments. Old, weak trees or trees of poor variety may be removed from areas where young trees have been planted before this year for replacements, and credit may be removed from areas where young trees have been planted before this year for replacements, and credit will be allowed. The law reads: - "Prior approval of the County Committee must be obtained before performing this practice. Payment allowed only for removal of live, permanent apple trees, and not for filler or semi-permanent trees. Land so cleared must not be used for the growing of soil-depleting crops during the program year for which the payment is made. No payment allowed for removal of trees less than 5 inches in diameter. Measurements of trunk diameter will be made approximately one foot above ground level. Payment for this practice will be available in any county upon approval of County Committee. Not more than $15.00 per acre may be earned under this practice." The program is designed for - "Removal of disease-infested or uneconomic apple trees". It applies to commercial or non-commercial apple trees. Payments allowed are: (1) trees 5 to 12 inches in diameter --- one-fifth unit or 30¢ per tree. (2) trees more than 12 inches in diameter --- one-third unit or 50¢ per tree. Maximum payment $15.00 per acre.

For further information see your County Agent.

Horticultural Farm, especially with McIntosh, a variety that did not react as well as other varieties. The use of these so-called "stop-drop" sprays will not only save the loss due to premature dropping of fruit, but will greatly aid in the improvement of quality, as the harvest can be delayed until the fruit is well colored and also until the fruit reaches best stage of ripeness for storage and for the consumers palate.

Along the line of maturity or ripeness, the Maryland Horticultural Department has been conducting experiments to determine more precisely the best stage at which apple varieties should be harvested to obtain best keeping quality and edible quality. A new starch test seems to have considerable merit with some varieties and will receive further test this season. With the use of the "stop-drop" sprays a method for determining maturity becomes more important, as apples may hang on the tree too long and a loss be sustained by over-ripeness. One case with Williams has already been reported where apples became too soft to handle. The Magness pressure tester no doubt will be of great aid to growers who do not wish to lose storage quality.

Another advance to improve quality is recorded in the efforts of growers, package manufacturers, grader manufacturers, and extension specialists to minimize bruising of both peaches and apples. Nevertheless, much greater improvement is necessary to eliminate bruised and cut fruits that discourage the sale of such fruit and lowers the storage life. Mr. A. F. Vierheller, Extension Specialist in Horticulture, University of Maryland, has conducted an effective one-man campaign against bruising of Maryland fruit, and many growers have used his well-worded placards in the packing shed, advising all workers that "Banged Up Fruit Brings Knock-Down Prices" and with similar whimsical phrases.

Another campaign which should prove of value to directly or indirectly improve the quality of apples on our markets includes the removal of poor trees and undesirable varieties which may receive further impetus from Federal funds under the tree-removal proposal. Many farm orchards producing poor grade or cull fruits may thus be taken out.

All of these efforts to improve fruit quality play a vital part in the solution of the fruit marketing problem, as everyone will agree that the first step in successful marketing is to produce fruit worth marketing. Thus, it might likewise be said that these improvements in production practices are also important factors in marketing of the fruit crop. Further progress in production and marketing of apples and peaches depends on the ability of fruit growers plus all allied agencies to find and use new ways to produce or market their fruit, or at least to improve the methods already in use.

TREE REMOVAL

There was a stiff fight waged to get the tree removal program worked into the National Soil Conservation Program for 1941. There are plenty of apple trees that are marked for slaughter because they are not profitable. Let's show our cooperation in the program. It was designed to help the growers with tree removal. It applies only to apple trees. See your county agent and get the facts before starting, otherwise payments may not be made. Do it now.

124391

COLD STORAGE HOLDINGS—NOVEMBER 1

Agricultural Marketing Service, U. S. Dept. of Agriculture reports the following apples in commercial cold storage, November 1, 1940:

	Nov. 1 5-yr. av. 1935-39	Nov. 1 1939	Oct. 1 1940	Nov. 1 1940
Barrels	492,000	286,000	45,000	216,000
West. box	12,833,000	10,989,000	3,176,000	12,577,000
East. box	reported as "bu. baskets"	8,195,000	3,067,000	8,441,000
Bu. baskets	15,343,000	10,265,000	2,512,000	9,165,000
Total Bu.	26,652,000	30,307,000	8,890,000	*30,831,000

*Included in these figures are 3,450 barrels and 298,548 bushels stored by Surplus Market Administration.

PRUNING

Each year we write something about this necessary, troublesome, costly, yet beneficial orchard practice. We can prune and lose money and we cannot prune and maybe lose more money. The market is yelling for quality and that means color, size, flavor, and clean fruit. Pruning is a form of thinning. We can correct a lot of bad crotches in young trees and build a stronger framework by properly pruning the young tree. Those older, thick trees can stand some thinning-out of unnecessary branches clear out to the ends of the limbs. The entomologists tell us that codling moth control is impossible if trees are too thick to spray through, or to spray up inside. Also notice that on older apple trees there are a lot of weak scaffold limbs growing out from the main or primary trunk branches. Note that these small limbs grew a lot of small, poorly-colored apples this year. Better take out some of these, this year. You won't miss them. On peaches, we didn't thin off enough fruit, this year, and we got no size. Why not get out a lot of small stuff in the peach trees, and have a start on thinning, for next season? Study your trees, and decide what should come out, then figure how much you can afford to take out. Pruning is a "job" but we can't let it slip.

THE ANNUAL MEETING

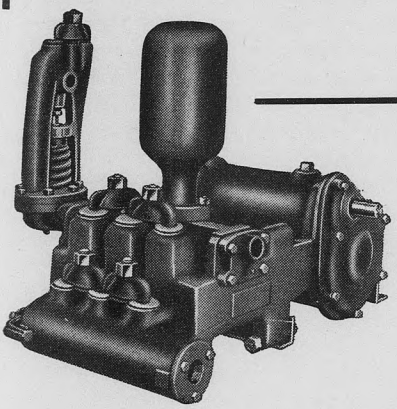
The Maryland State Horticultural Society will meet at the Y.M.C.A., Hagerstown, Maryland, on Wednesday and Thursday, January 8 and 9, 1941. An interesting program is being prepared, covering topics of real interest to growers. There will be commercial exhibits of orchard equipment and materials staged in the newly-completed basement of Municipal Market House directly in the rear of the Y. M. C. A. building. Things to see, and hear and learn. Old friends to meet. A full two days' activity is being planned for YOU. Plan to be there and bring your wife and your neighbor. Program will be mailed to you in December.

The Fruit Exhibit will be held at Lord Baltimore Hotel, Baltimore, January 15 and 16, 1941 with Maryland Farm Bureau Meetings.

"Are you a college man?"
"No. A horse stepped on my hat."

THE IRON AGE SPRAYER

has won the heart of the orchardist!



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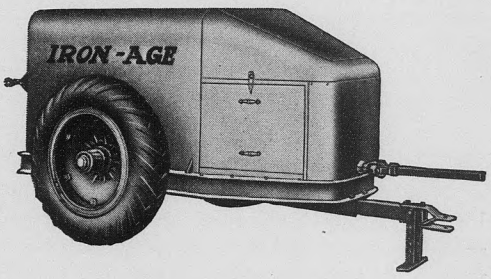
is ideal for orchard use. Hook it to your tractor, fill the tank and you're ready to go.

And, underneath the clean, streamlined bonnet of every Iron Age Sprayer is its efficient heart—the Victory Pump. This pump gives every orchardist, large and small, the advantages of pressure just as high as you want it—at low cost. The easy running Victory Pump has been highly endorsed by hundreds of prominent growers. It operates at slow speed which gives it long life and economy. And regardless of which size you buy, in any type of Iron Age Sprayer, you can be sure of more thorough spraying at minimum cost when your sprayer heart is a Victory Pump.



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THE CONTROL OF TREE GIRDLING MICE IN ORCHARDS

JOHN N. HAMLET
Specialist in Rodent Control—University of Maryland

The best method to control both pine mice and meadow mice in orchards is a poison operation. Research men, after several years of work on this problem, have found that the most successful control may be reached by the use of a rodenticide in which zinc phosphide is the toxic agent. In food habit studies it was found that apple was the best carrier for this rodenticide.

It must be remembered that there are usually three or four kinds of mice inhabiting an orchard, but usually there is only one kind that harms the orchard trees. From Central Maryland south, it is usually the pine mouse that does the damage, an extremely short-tailed small individual that spends most of his time underground. While north of Central Maryland, the meadow mice, another short-tailed variety, begins to make himself known by his many runways and trails through the grass.

To control these mice it is necessary to place the bait so that the mouse is forced to come in contact with it. In the case of the meadow mouse, that would be in the runways or trails on the surface of the ground. In the case of the pine mouse, the bait must be put into the surface holes or in the underground tunnels to obtain best results. This placement of bait is made easier and more effective by the use of concentration stations discussed in the August-September, 1940, issue of The Maryland Fruit Grower.

The rodenticide may be obtained through your county agent. To mix this poison agent with apple, it is first necessary to cut the apple into approximately ½ inch cubes, then mix one level teaspoon of rodenticide to one quart of cubed apple baits; mix well by shaking contents in an enclosed can or by stirring. When mixed correctly, each cube of apple should be covered with the light gray powder of rodenticide. The orchardist should only mix the amount he can use at the time for it is necessary to place relatively fresh baits in the runways or tunnels. When placing the baits, do not pick up the cubes with your fingers; instead use a sharp stick or piece of wire, stab each cube and place it in that manner. Two or three cubes to a tree should give ample control this year. Remember, that in the case of pine mice, their migratory habits make it necessary to poison every two months during the winter in some cases where there is an extremely heavy infestation.

A NEW SCAB CONTROL?

At the summer meeting of Peninsula Horticultural Society, Dr. K. J. Kadow, Head of Horticultural Department, University of Delaware, showed some plots in an orchard where the ground under the trees was sprayed with a commercial spray, Elgetol. This is a type of dye which is said to be able to soak or penetrade through 5 layers of leaves, killing out the scab spores before they get a chance to develop in the spring. Ten gallons were sprayed under each tree. The estimated cost of the spray material for 1 acre was $6.00. Of course, the regular scab sprays would also be applied, as Elgetol is merely a supplemental measure. Dr. Kadow also used as a "ground spray" a mixture of nitrate of soda, 100 pounds plus 4 pounds of calcium arsenite (not arsenate) in 100 gallons of water. This is cheaper than the Elgetol, but its benefits are yet in doubt, due to possible soil injury. This last "ground spray" was developed in New York by the research men, and is still under trial. It is to be remembered that this is merely a progress

report, and probably we should know more about this material before we use it on a large scale in our orchards. If it is effective enough to reduce scab infection down to 4%, as indicated in the plots in Delaware, then we really have something to be of great help in our sod orchards.

WHITEWASH FOR SUNSCALD PREVENTION

Some growers who have experienced winter sunscald damage have used small boards leaned against the tree trunks, but some materials which will stick to the trees and refract the rays of the winter sun have been used with success. The following formulas for mixing such materials are given for growers' information. At any rate, they are good mixtures for a good whitewash.

Mixture No. 1. Slake 40 pounds of lime in boiling water. Strain, and to the liquid add 15 pounds of salt previously dissolved in warm water. Add 3 pounds of ground rice boiled to a thin paste; stir it in while hot. Add ½ pound of Spanish whiting and 1 pound of glue (dissolved by soaking in cold water and then warmed over a slow fire). To this mixture add 5 gallons of hot water. Stir well and let stand for a few days before using. Apply hot.

Mixture No. 2. Slake 5 pounds of quicklime. While the lime is slaking add ½ pound salt and ¼ pound sulfur. Allow the whitewash to stand several days before using. Dilute to the consistency of paint, and apply with a brush.

Mixture No. 3. Six pounds of whiting, 1 pound of casein spreader and water to make the mixture the consistency of paint. To this add ⅓ pint of raw linseed oil. When painted on tree trunks this preparation is very lasting.

Have you DRAINED your spray equipment for winter?

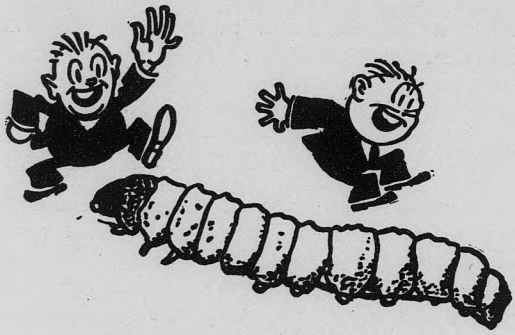
CULL APPLES AS COW FEED

In September, 1940, Virginia Fruit, C. W. Holdway, Head of the Dairy Department of V. P. I. states that apples add to the palatability of dry dairy feeds, causing cows to eat more and add to the milk flow. He also suggests the use of whole apples in the silo with alfalfa hay silage, using 80 pounds of apples with 20 pounds of alfalfa hay silage. The alfalfa supplies the materials that are lacking in apples, and vice versa. The alfalfa absorbs the apple juices in the silo, so very little is lost in the process. Whole apples are worth slightly more than one-half as much corn silage. Apple peelings contain six times as much Vitamine C as any other part of the fruit and these peelings are a good addition to the silo at filling time, along with the corn fodder. Maryland dairymen are using fresh apples either whole or chopped up, adding it to the daily dry feed.

Tommy's uncle came to visit, and Johnny had to give us his room. Next morning the uncle said, "I appreciate the glass of water on the table beside my bed. It tasted very refreshing when I awoke during the night."

"Oh," gasped Tommy, "I'll bet you swallowed my tadpoles and everything."

Have you read the advertisments?



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D-X was developed as a more effective and less expensive pyrethrum and rotenone spray. Its special feature is a patented base encasing these ingredients in an oil globule greatly increasing their activity and penetration into the vital organs of the insects, and making combinations heretofore impossible.

But a surprising and unexpected thing happens when this material is combined with arsenate of lead. D-X impregnates the arsenate of lead with pyrethrum and rotenone, greatly increasing the toxicity of both, which the mere addition of pyrethrum or rotenone will not do, and controls insects that have been difficult to control with either material alone.

The reports from the first experiments with D-X and arsenate of lead against codling moth came back so enthusiastically that it was hard for us to believe. But, after several seasons use in many sections of the country, it is an established fact that herein lies the most outstandingly successful codling moth control that it has been our pleasure to witness. The secret of its success lies in its great effectiveness at the peak of the hatch of the first brood larvae.

Be sure to speak to our Mr. Pratt or our representative at the Exhibit Room or write us care of Department "F". D-X has many other valuable uses in your orchard such as the control of leaf roller, aphis, leaf hopper, pear psylla, etc.

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